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and has other obvious advantages over the use of loose corks. The lower portion of the porous tube is glazed with DeKotinsky cement to insure a constant evaporating surface. (This cement, by the way, when properly heated is far superior to sealing-wax for most laboratory purposes.) In refilling the bottle or determining the water loss it is only necessary to remove the capillary tube and insert the burette tip. If air bubbles collect in the porous tube when first set up, they may be removed by inverting the instrument and allowing the water to force them out. The collection of air bubbles may be avoided, however, by first placing the tubes in alcohol and then in distilled water, or by boiling in water before setting up. For determining the water loss I found it in some instances advantageous to weigh the entire instrument from time to time. Because of the small size of the porous tube, 250^{cc} of water is sufficient for two weeks of exposure under ordinary Illinois conditions. Under certain circumstances the smaller size is an advantage, because the instrument is less conspicuous.—EDGAR N. TRANSEAU, *Charleston, Illinois*.

PHYLOGENY OF PLANTS

The following statement has been received from Dr. LOTSY in reference to the recent review of the second volume of his *Vorträge über botanische Stammesgeschichte* in this journal:¹

May I call your attention to an error in your review in saying that "Anthoceros is accorded the status of the most primitive liverwort on the ground that it is nearest the algae in having in each cell only one chloroplast and this furnished with a pyrenoid." Now I certainly do *not* consider Anthoceros as the most primitive liverwort, as I can prove by the following passage on page 74 of my book: "Das primitivste Lebermoos in Bezug auf die Struktur seiner Chromatophoren ist Anthoceros, zu gleicher Zeit das höchste in Bezug auf seine 2x-Generation. . . . Ihm und seinen Verwandten ist also eine isolierte Stellung anzuweisen. . . . Jedenfalls hat Anthoceros eine sehr hoch entwickelte 2x-Generation und kann uns also bei der Suche nach einer sehr niedrigen Archegoniate nicht behilflich sein. Sehen wir also einmal, ob wir irgendwo anders glücklicher sind." Your deduction that I consider Anthoceros the most primitive liverwort is probably derived from a passage on page 61, which you either understood imperfectly or in which I expressed myself imperfectly. In either case we can both be excused, I think, as you read and I write a foreign language.

¹ BOT. GAZETTE 49:225. 1910.

I may perhaps be allowed, therefore, to explain in a few words how I tried to get at the "Urform" of the liverworts. I began by saying to myself: liverworts must be derived from an alga-like ancestor, so let us see which liverwort has in its cells the greatest similarity to algae. As such I took *Anthoceros*, and started to examine it as a possible candidate for the position of the most primitive liverwort, but *rejected* it as such on account of its highly developed $2x$ generation. Having thus failed with *Anthoceros*, which I had chosen as a possible candidate on account of the cell structure of the x generation, I tried whether I would have better luck in examining *Riccia* as a candidate, which, on account of its having the most primitive $2x$ generation, seemed to have some qualifications to fill the post of the most primitive liverwort. Unfortunately, I had to reject this candidate also, on account of the high development of its x generation. Having thus found that neither *Anthoceros* nor *Riccia* would fill the post, I applied to *Sphaerocarpus* as the all-round "simplest known" liverwort. In this expression I plead guilty; it would have been better to say "the simplest liverwort now living." This candidate I had to reject also, as its $2x$ generation was already too highly developed, higher in fact than that of *Riccia*. The "Urform" was therefore evidently extinct, and I concluded that it must have had a very simple thallus, somewhat like that of *Sphaerocarpus*, and a sporophyte somewhat like that of *Riccia*; for this reason, I designated this hypothetical form as "Sphaeroriccia." It seems to me that this way of getting at the problem is not so very erratic, but fairly logical; but I regret if I failed to express myself with sufficient clearness; and I am grateful for the opportunity the review gives me to explain my views in this respect in a more satisfactory way.—J. P. LOTSY, *Leiden*.